

SUPPLY AND DEMAND ANALYSIS

In order to quantify the alternative water sources that would be necessary, a comparison of future urban irrigation supply and demand was performed. Irrigation water surpluses and deficits were identified both geographically and temporally in the defined study area, and used to help identify the most effective alternatives in the next phase of the project. Tables 17 and 18 present the surplus/deficit summary for each service area. Also, a summary of the existing agricultural users within the study area is provided as Attachment F. Nearly 600 MGD is currently utilized for agricultural irrigation during the dry season in the study area. Most of this water is currently derived from surficial and intermediate aquifer wells. Figures 22 through 25 display the surplus and deficit information derived from this analysis.

Figure 26 illustrates the supply/demand analysis for the entire RIDS service area. Supplies including surface water ASR, surface water withdrawals, reclaimed water, and reclaimed water display the cumulative benefit of all alternative options. The lines demonstrate the demand that was seen in year 2000, the year 2000 demand plus the anticipated major irrigation users to request reclaimed water in the next 20 years, and the projected 2020 irrigation demand.

It is clear that by the year 2020, the projected irrigation water demands will far outweigh the supply if no alternative sources of water are integrated into the existing systems.

LEGEND:

+0.6 Annual Average Surplus/Deficit (MGD)

Coast Line

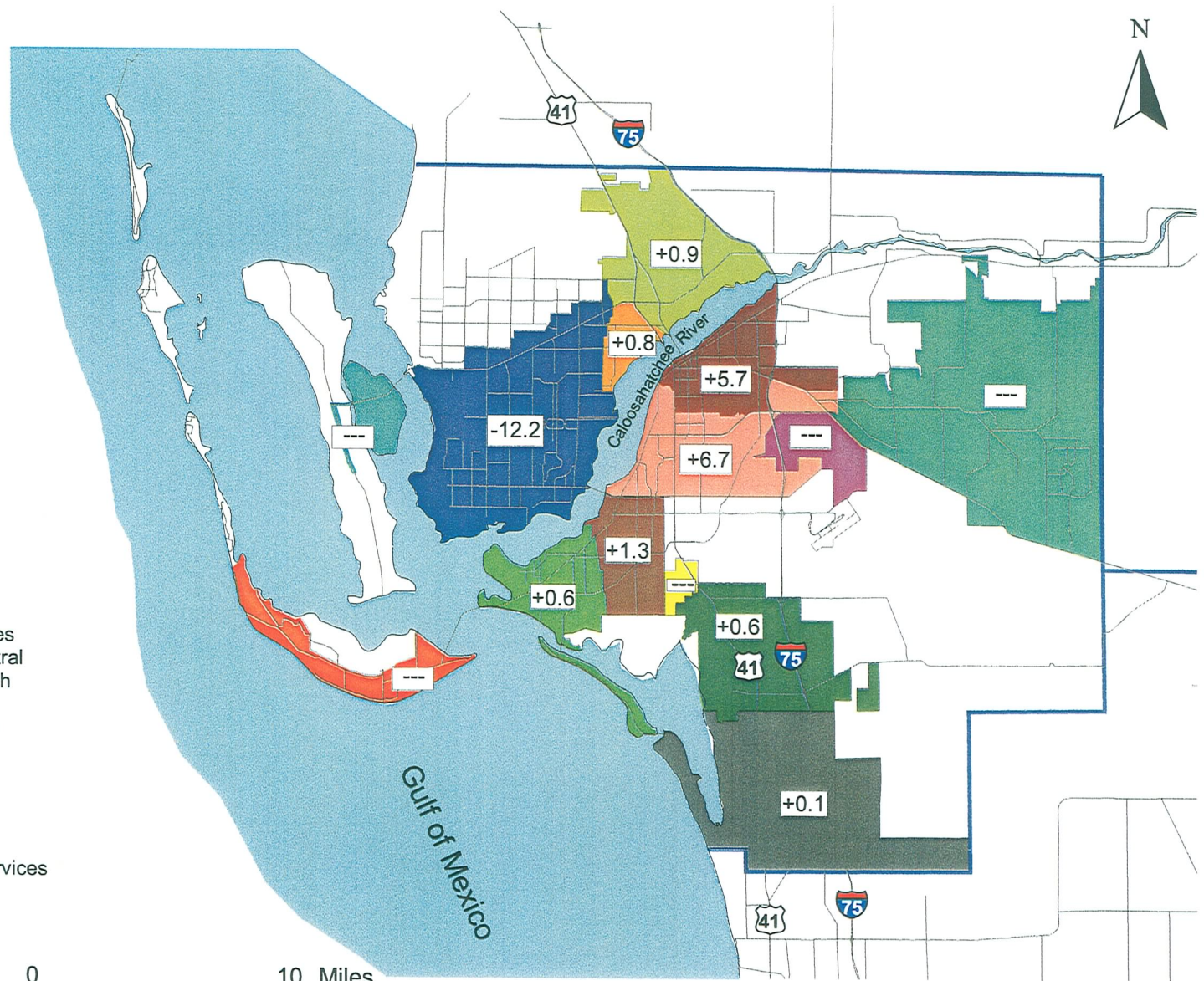
Major Roads

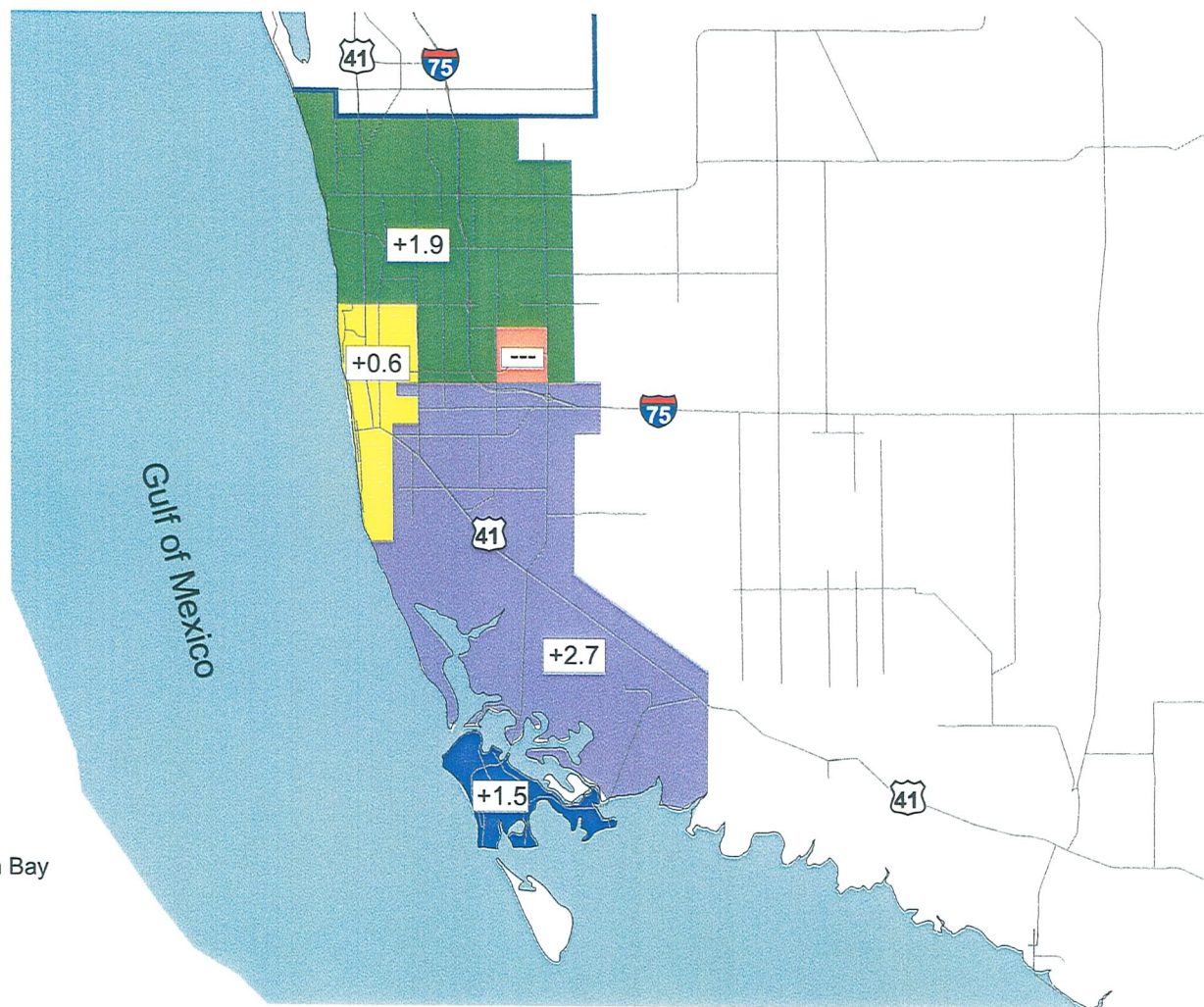
County Boundary

Water

- Pine Island
- Cape Coral Utilities
- North Fort Myers Utilities
- City of Fort Myers-Central
- City of Fort Myers-South
- Gateway
- Florida Water Services
- Fort Myers Beach
- Fiesta Village
- Waterway Estates
- Forest Utilities
- Sanibel
- Gulf Environmental Services
- Bonita Springs Utilities

10 0 10 Miles





LEGEND:

+1.9 Annual Average Surplus/Deficit (MGD)

Coast Line

Major Roads

County Boundary

Water

Golden Gate

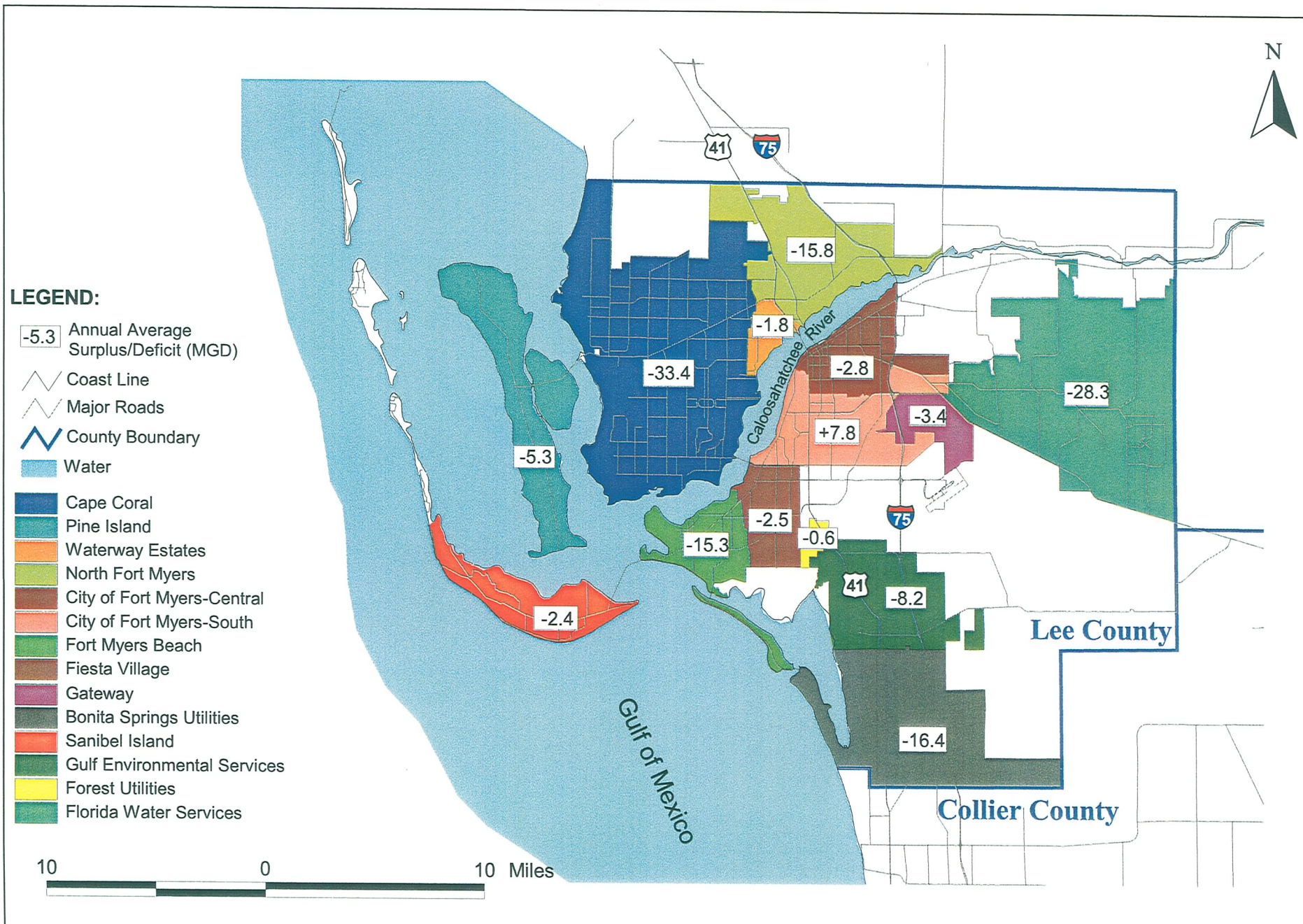
Collier County North/Pelican Bay

Naples

Collier County South

Marco Island

10 0 10 Miles



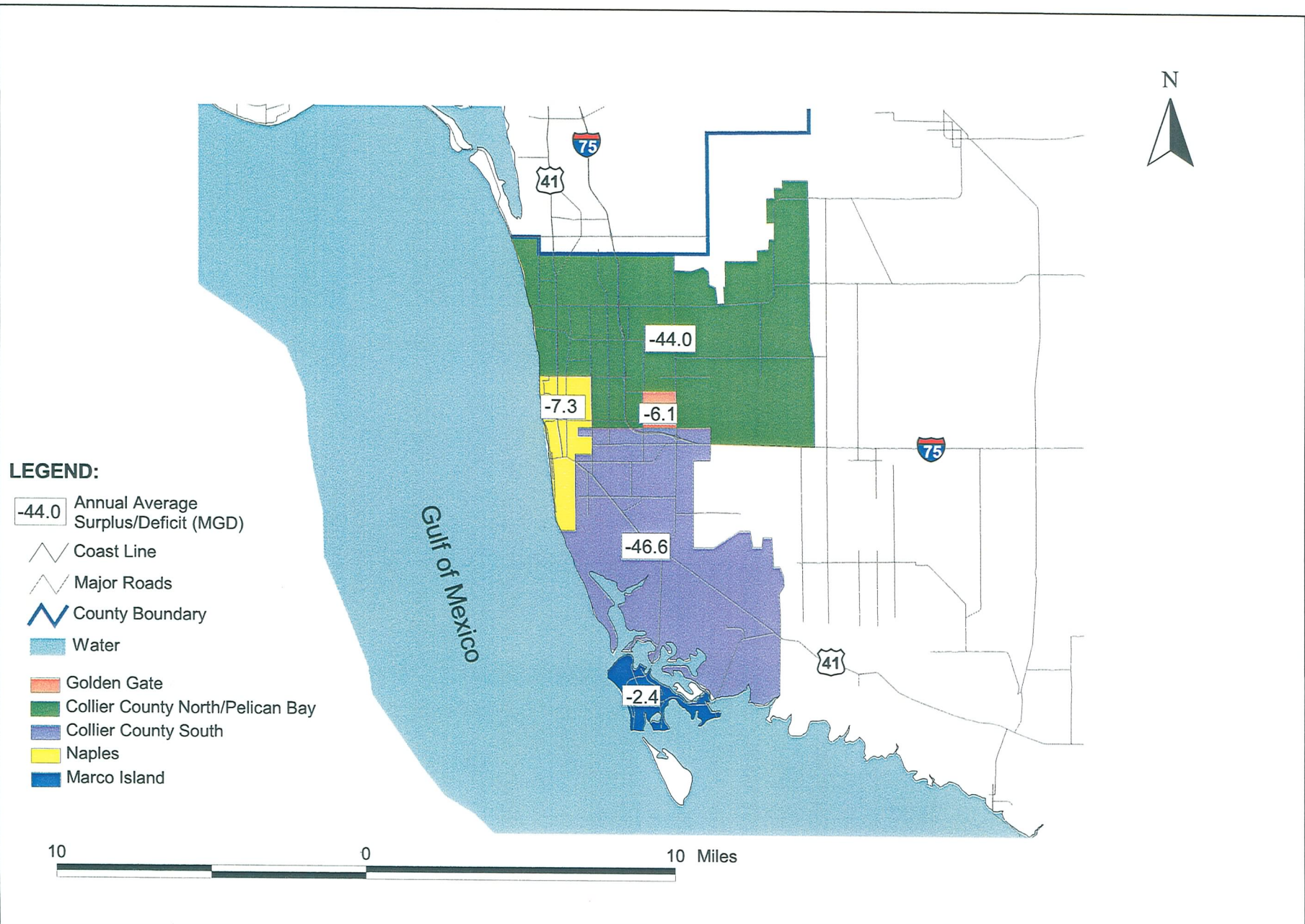


Figure 26 -- Supply/Demand Analysis

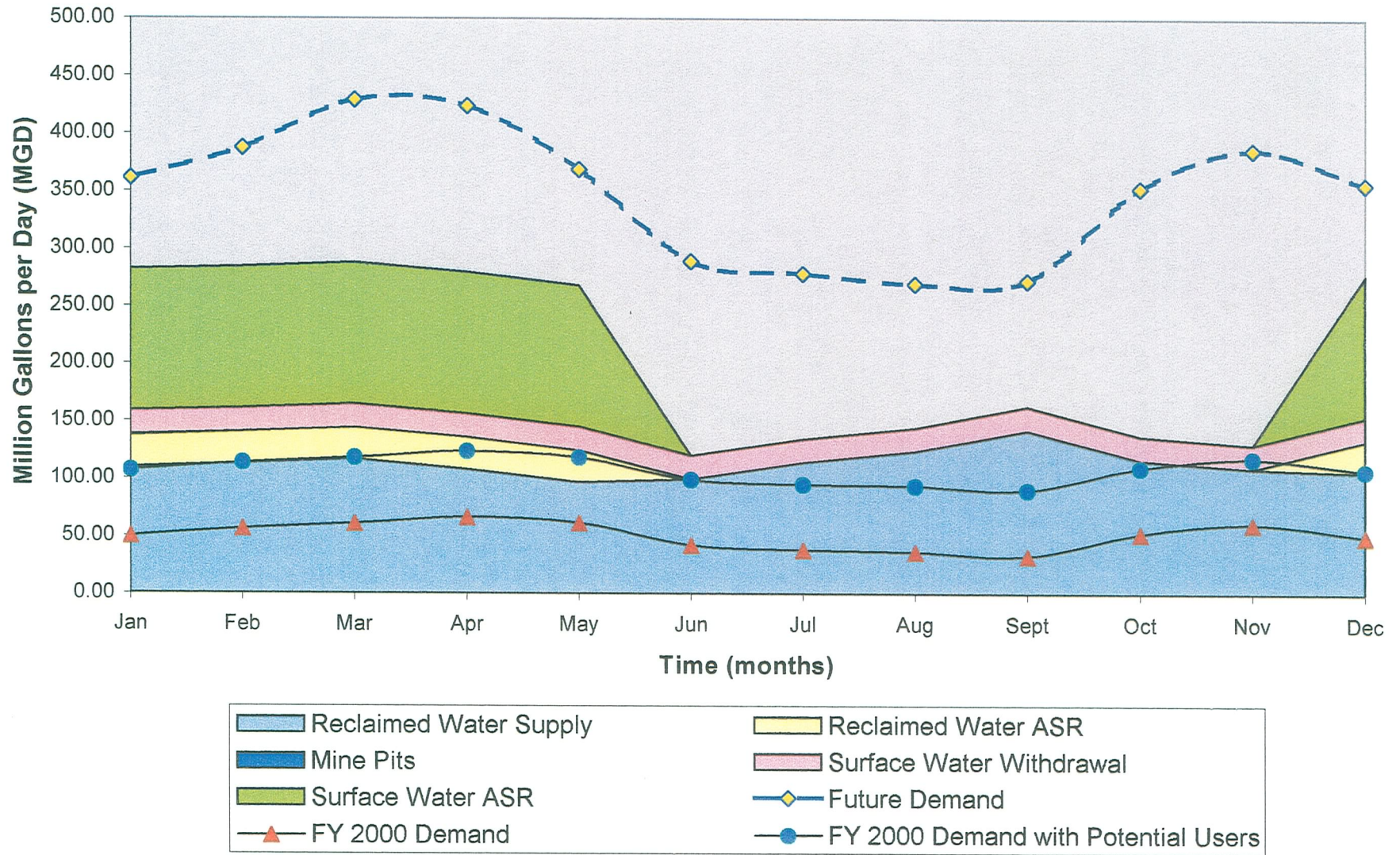


Table 17
Surplus/Deficit Analysis – Current

Facility	Monthly Surplus/Deficit (MGD)												Annual Average (MGD)	Annual Total (MGY)
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec		
Collier Co.														
Collier Co. North	1.9	2.0	1.9	1.9	1.7	1.6	1.1	2.1	3.3	1.7	2.2	1.5	1.9	696.2
Collier Co. South	3.6	1.7	1.6	0.8	1.5	1.6	2.5	3.9	6.2	3.5	3.3	4.1	2.9	1,045.6
Golden Gate	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Marco Island Utilities	1.3	1.6	1.9	0.8	1.4	1.9	2.5	2.5	1.6	1.0	0.6	0.7	1.5	548.0
Naples	0.5	0.7	1.1	0.7	(0.4)	(0.2)	1.7	1.0	0.7	0.5	0.7	0.6	0.6	230.6
Subtotal	7.2	6.0	6.5	4.2	4.1	4.9	8.0	9.5	11.8	6.7	6.8	7.0	6.9	2,520.4
Lee Co.														
Bonita Springs	0.0	0.0	-	(0.0)	-	-	0.5	(0.0)	0.5	(0.0)	0.0	0.0	0.1	31.0
Cape Coral Utilities	(11.4)	(15.4)	(17.4)	(23.6)	(24.0)	(6.2)	(2.3)	(0.7)	2.3	(13.2)	(21.3)	(13.1)	(12.2)	(4,453.3)
Fiesta Village	1.2	1.2	1.2	1.0	0.7	1.2	1.8	1.9	2.7	1.4	0.8	1.0	1.3	487.4
Forest Utility	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ft. Myers Beach	1.2	2.0	0.2	(0.4)	(0.5)	0.4	0.6	0.7	2.0	0.1	0.3	0.9	0.6	225.0
Ft. Myers Central	3.8	4.2	4.4	4.4	4.2	4.8	6.9	8.3	11.7	6.4	4.6	4.2	5.7	2,063.5
Ft. Myers South	5.5	5.5	5.8	5.7	4.9	5.4	7.8	9.6	11.5	7.0	5.8	5.5	6.7	2,437.3
Gateway	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gulf Environmental Services	0.7	0.8	0.8	0.7	0.5	0.4	0.5	0.6	0.8	0.3	0.5	0.5	0.6	216.0
Lehigh Acres	-	-	-	-	-	-	-	-	-	-	-	-	-	-
North Ft. Myers	0.6	0.6	0.7	0.3	1.7	0.4	1.4	1.6	1.5	1.0	0.5	0.5	0.9	330.6
Pine Island	-	(0.1)	0.0	0.0	(0.0)	0.0	0.1	0.0	0.0	(0.0)	(0.0)	0.0	0.0	1.0
Sanibel	0.0	0.0	0.0	0.1	0.0	0.1	0.0	0.1	0.1	0.0	(0.2)	0.1	0.0	14.5
Waterway Estates	0.8	0.6	0.7	0.7	0.7	0.7	0.9	1.1	1.2	1.0	0.8	0.8	0.8	309.4
Subtotal	2.5	(0.7)	(3.5)	(11.1)	(11.8)	7.3	18.2	23.2	34.2	4.1	(8.2)	0.3	4.6	1,662.3
Total Monthly Flow (MGD)	9.7	5.3	3.0	(6.8)	(7.7)	12.2	26.2	32.7	46.1	10.8	(1.4)	7.3	11.5	4,182.7

*These figures represent calculated values based on the supply and demand displayed in Tables 13 and 14.

Table 18
Surplus/Deficit Analysis - Future

Facility	Monthly Surplus/Deficit (MGD)												Annual Average	Annual Total
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	(MGD)	(MGY)
Collier Co. Reclaimed Supply														
Collier Co. North	(51.1)	(52.9)	(56.8)	(47.4)	(39.3)	(35.9)	(39.0)	(36.2)	(30.6)	(44.2)	(44.7)	(49.6)	(44.0)	(16,047.7)
Collier Co. South	(54.7)	(56.9)	(61.5)	(51.0)	(42.1)	(37.7)	(40.0)	(37.6)	(31.2)	(46.2)	(47.8)	(53.0)	(46.6)	(17,026.4)
Golden Gate	(5.9)	(5.6)	(5.4)	(5.6)	(5.4)	(5.2)	(6.6)	(5.9)	(10.0)	(5.8)	(5.6)	(5.9)	(6.1)	(2,220.8)
Marco Island Utilities	(3.7)	(2.9)	(3.0)	(2.9)	(1.1)	(0.2)	(1.0)	(0.4)	(2.3)	(3.3)	(3.6)	(4.2)	(2.4)	(867.6)
Naples	(9.5)	(10.0)	(10.7)	(8.3)	(7.0)	(5.7)	(4.0)	(4.6)	(4.0)	(7.3)	(7.7)	(8.9)	(7.3)	(2,666.3)
Subtotal	(124.9)	(128.2)	(137.3)	(115.2)	(95.0)	(84.7)	(90.6)	(84.7)	(78.1)	(106.8)	(109.3)	(121.6)	(106.4)	(38,828.8)
Other Sources of Supply	114.3	114.3	114.3	114.3	114.3	22.1	22.1	22.1	22.1	22.1	22.1	114.3	68.2	24,893.0
Potential Users	(16.0)	(16.0)	(16.0)	(16.0)	(16.0)	(16.0)	(16.0)	(16.0)	(16.0)	(16.0)	(16.0)	(16.0)	(16.0)	(5,840.0)
NEW Subtotal	(26.6)	(29.9)	(39.0)	(16.9)	3.3	(78.6)	(84.5)	(78.6)	(72.0)	(100.7)	(103.2)	(23.3)	(54.2)	(19,775.8)
Lee Co. Reclaimed Supply														
Bonita Springs	(17.8)	(18.1)	(19.3)	(17.7)	(14.3)	(13.4)	(11.4)	(15.2)	(14.9)	(17.8)	(17.7)	(18.5)	(16.4)	(5,969.1)
Cape Coral Utilities	(31.3)	(41.6)	(46.8)	(62.7)	(63.8)	(17.9)	(8.1)	(3.9)	3.7	(36.1)	(56.9)	(35.6)	(33.4)	(12,197.9)
Fiesta Village	(3.1)	(4.6)	(3.9)	(4.3)	(4.8)	(1.2)	1.1	1.6	0.6	(2.2)	(5.6)	(3.7)	(2.5)	(914.9)
Forest Utility	(0.7)	(0.7)	(0.7)	(0.7)	(0.6)	(0.6)	(0.6)	(0.5)	(0.5)	(0.6)	(0.6)	(0.7)	(0.6)	(231.9)
Ft. Myers Beach	(11.8)	(9.2)	(22.8)	(23.8)	(19.0)	(12.9)	(12.3)	(12.0)	(13.7)	(16.5)	(18.0)	(12.0)	(15.3)	(5,597.9)
Ft. Myers Central	(4.6)	(4.4)	(5.5)	(6.2)	(6.3)	(3.7)	(0.9)	1.1	6.4	(1.6)	(3.7)	(4.0)	(2.8)	(1,017.2)
Ft. Myers South	6.4	6.4	6.8	6.7	5.7	6.3	9.2	11.2	13.4	8.2	6.7	6.4	7.8	2,844.6
Gateway	(3.3)	(3.1)	(3.3)	(3.0)	(3.2)	(3.3)	(3.2)	(3.9)	(3.8)	(3.8)	(3.8)	(3.6)	(3.4)	(1,256.1)

Table 18
Surplus/Deficit Analysis - Future

Facility	Monthly Surplus/Deficit (MGD)												Annual Average	Annual Total
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	(MGD)	(MGY)
Gulf Environmental Services	(9.0)	(8.7)	(9.6)	(8.8)	(6.9)	(6.4)	(5.4)	(7.4)	(7.3)	(9.6)	(9.4)	(9.8)	(8.2)	(2,993.1)
Lehigh Acres	(24.2)	(21.3)	(44.7)	(44.9)	(35.3)	(24.6)	(22.4)	(19.7)	(20.7)	(26.3)	(33.2)	(22.4)	(28.3)	(10,331.4)
North Ft. Myers	(17.8)	(17.5)	(14.0)	(24.5)	(18.9)	(16.4)	(12.3)	(6.0)	(9.3)	(16.9)	(17.9)	(18.5)	(15.8)	(5,778.1)
Pine Island	(5.3)	(5.4)	(5.3)	(5.3)	(5.3)	(5.3)	(5.2)	(5.2)	(5.3)	(5.3)	(5.3)	(5.3)	(5.3)	(1,928.9)
Sanibel	(2.4)	(2.6)	(2.9)	(2.7)	(1.9)	(2.1)	(3.0)	(2.2)	(2.1)	(2.1)	(3.2)	(2.0)	(2.4)	(888.3)
Waterway Estates	(1.8)	(15.3)	(2.7)	(2.4)	(2.4)	(3.3)	0.7	1.2	1.4	1.1	0.9	0.9	(1.8)	(658.0)
Subtotal	(126.8)	(146.1)	(174.8)	(200.3)	(177.0)	(104.8)	(73.9)	(61.0)	(52.1)	(129.5)	(167.5)	(128.8)	(128.5)	(46,918.3)
Other Sources of Supply	61.7	61.7	61.7	61.7	61.7	3.4	3.4	3.4	3.4	3.4	3.4	61.7	32.6	11,880.8
Potential Users	(41.0)	(41.0)	(41.0)	(41.0)	(41.0)	(41.0)	(41.0)	(41.0)	(41.0)	(41.0)	(41.0)	(41.0)	(41.0)	(14,965.0)
NEW Subtotal	(106.1)	(125.4)	(154.1)	(179.6)	(156.3)	(142.4)	(111.5)	(98.6)	(89.7)	(167.1)	(205.1)	(108.1)	(137.0)	(50,002.6)
Total Monthly Flow (MGD)	(132.7)	(155.4)	(193.1)	(196.5)	(153.1)	(221.0)	(196.0)	(177.2)	(161.6)	(267.8)	(308.3)	(131.4)	(191.2)	(69,778.4)

*These figures represent calculated values for the expected irrigation water deficit in the year 2020.